Remarks/Arguments

The foregoing amendments and these remarks are in response to the Office Action, dated June 6, 2005. This Amendment is timely filed.

At the time of the Office Action, claims 1-17 were pending in the application. Claims 1, 3, 4, 6, 7, 9, 10, 12 and 13 were rejected under 35 U.S.C. § 102. Claims 2, 4, 5, 7-17 were rejected under 35 U.S.C. § 103.

Claims 2 and 4-18 are pending. Claims 1 and 3 are cancelled; claims 2 and 4-6 have been amended; and claim 18 is new. Claims 7-17 remain as originally presented.

Rejections Under 35 U.S.C. § 102

Claims 1, 3 and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,735,656 to Schaefer et al. ("Schaefer"). Claims 1, 3, 4, 6, 7, 9, 10, 12 and 13 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0208749 to Torigoe et al. ("Torigoe"). Each of these rejections will be addressed in turn below.

Schaefer

Because claims 1 and 3 have been cancelled, the rejections of those claims based on Schaefer are moot. Applicant respectfully submits that the rejection of claim 6 based on Schaefer is not well founded. The Office Action does not cite any particular portion of Schaefer to support the rejection. Moreover, the only manner of attachment disclosed in Schaefer is a general discussion of adhering an abrasive tape to the tip of a blade. Schaefer is devoid of any mention of electroplating the abrasive material to the blade tip. Therefore, the rejection of claim 6 based on Schaefer is not proper and should be withdrawn. While claim 18 is newly presented,

Applicant notes that it is substantially similar to claim 6. For the foregoing reasons, claim 18 is distinguishable over Schaefer as well.

Torigoe

Applicant respectfully disagrees that Torigoe anticipates claims 1, 3, 4, 6, 7, 9, 10, 12 and 13. However, the issue is moot because Torigoe does not qualify as prior art under 35 U.S.C. § 102(e), which states that a person shall be entitled to a patent unless:

> the invention was described in — (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language;

The present application was filed on December 11, 2003. Torigoe published on October 21, 2004 based on a non-provisional patent application filed on December 12, 2003, which is one day after the filing date of the present application. The U.S. patent application is labeled as a "[c]ontinuation of application No. PCT/JP02/05911, filed on Jun. 13, 2002." Significantly, the international application was not published in the English language, except for the abstract. The English abstract provides insufficient detail to support any of the rejections in the Office Action. In light of these facts, Torigoe is not prior art under 35 U.S.C. 102(e) and cannot not be used to reject the claims of the present application. Therefore, the rejections based on Torigoe, in whole or in part, should be withdrawn.

Rejections Under 35 U S C. § 103

Claims 2 and 5 were rejected under 35 U.S.C. § 103(a) as being upatentable over Schaefer. Claims 2, 5, 8 and 11 were rejected under 35 U.S.C. § 103(a) as being upatentable over Torigoe. Claims 4 and 7-13 were rejected under 35 U.S.C. § 103(a) as being upatentable over Schaefer in view of Torigoe. Claims 14-17 were rejected under 35 U.S.C. § 103(a) as being upatentable over Torigoe in view of U.S. Patent No. 6,670,046 to Xia ("Xia"). Claims 14-17 were further rejected under 35 U.S.C. § 103(a) as being upatentable over Schaefer in view Torigoe and Xia.

Applicant respectfully disagrees that Torigoe renders any of the pending claims obvious and unpatentable. However, the issue is moot because, for all of the reasons set forth above, Torigoe does not qualify as prior art against the claims of the present application. All of the rejections based on Torigoe, in whole or in part, should be withdrawn.

Similarly, Xia is not available to support any assertion of obviousness. 35 U.S.C. § 103(c) provides that:

> [s]ubject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

The invention described in Xia is owned by the same entity that owns the instant patent application. Thus, Xia may not be used to reject the pending claims, though Applicant maintains that Xia does not renders any portion of claims 14-17 obvious and unpatentable. Therefore, for at least this reason, it is respectfully requested that all rejections based on Xia be withdrawn.

Consequently, all rejections under 35 U.S.C. § 103 that are based in whole or in part on Torigoe and Xia are moot. The only rejection that remains under 35 U.S.C. § 103 is the rejection of claims 2 and 5 as being upatentable over Schaefer. It is respectfully submitted that Schaefer does not render claim 2 obvious.

As noted in the instant patent application, a coating with relatively equal amounts of the cubic boron nitride and the silicon nitride has surprisingly proved to effectively retain the benefits of each material system – superior cutting properties of the cubic boron nitride and greater resistance to thermal degradation of the silicon nitride.

If the abrasive coating included substantially greater amounts of cubic boron nitride relative to silicon nitride, then the coating would exhibit superior cutting properties. However, its cutting ability would diminish over engine operation because the cubic boron nitride degrades in high temperature, oxidizing environment of a turbine engine. In contrast, if the abrasive coating included substantially greater amounts of silicon nitride compared to the cubic boron nitride, the coating would demonstrate greater resistance to thermal degradation in a turbine engine, but the cutting ability of the coating would diminish due to the low hardness of the silicon nitride. An abrasive coating having substantially equal parts of cubic boron nitride and silicon nitride substantially retains the benefits if these materials. Schaefer clearly does not appreciate such considerations, and it is only with the benefit of hindsight that one skilled in the art can modify the disclosure of Schaefer to arrive at the preferred mixture. Thus, the disclosure of Schaefer does not render claim 2 obvious.

For the same reasons, claim 5 is not obvious based on Schaefer. In addition, Schaefer does not teach or suggest an abrasive coating with cubic boron nitride, silicon nitride and CoNiCrAlY, which is recited in claim 4 from which claim 5 depends.

Conclusion

In light of the foregoing, it is respectfully submitted that the rejections set forth in the Office Action have been overcome. Accordingly, Applicant respectfully requests that the Examiner reconsider the claims currently pending in the application; withdraw the rejections under 35 U.S.C §§ 102 and 103; allow the pending claims; and promptly issue a timely Notice of Allowance.

Respectfully submitted,

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